

**DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING and COMPLIANCE DIVISION
MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(MPDES)**

Statement of Basis

PERMITTEE: US Army Corps of Engineers (USACE)

PERMIT NUMBER: MT0022390

RECEIVING WATER: Kootenai River

FACILITY INFORMATION:

Name: Libby Dam Project

Location: 17887 Highway 37
Libby, MT

Mailing Address: 17887 Highway 37
Libby, MT 59923-7828

Contact: Michael (Mick) P. Shea, Project Manager
Telephone: (406) 293-7751 ext. 211

FEE INFORMATION:

Number of Outfalls: 3 (for fee determination purposes)

Type of Outfall: 001 – Treated Domestic Waste
002 – Powerhouse Drainage Sump
003A through E – Individual Generator Non-contact Cooling
Water

I. Permit Status

The current Montana Pollutant Discharge Elimination System (MPDES) permit for the US Army Corps of Engineers (USACE) Libby Dam Project wastewater treatment plant (WWTP) became effective on November 1, 1995. It expired at midnight, December 31, 1999. On March 1, 1999, the permittee submitted short form 2A and the associated fees for renewal of the MPDES permit were received on November 23, 1999. In accordance with ARM 17.30.1313, the permit was administratively extended at that time. Additional information was submitted at the Department's request on February 21, 2007. On March 27, 2008, the Department received updated application forms DEQ-1 and EPA-2E. This application requests coverage for the currently permitted Outfall 001 and two new outfalls. The March 2008 application is the application of record.

II. Facility Information

A. Facility Description

USACE owns and operates the Libby Dam Project, located in Lincoln County, on the Kootenai River approximately 11 miles east of Libby, Montana. Construction was completed in 1972.

The application of record requests coverage for the following discharges from the facility:

- Outfall 001 – the currently permitted domestic wastewater treatment plant discharge;
- Outfall 002 (identified as Outfall 004 on the application) – Powerhouse drainage sump discharge; and
- Outfall 003A through E (identified as Outfall 005 on the application) – non-contact cooling water discharges from each individual generator associated with any operating combination of the five hydroelectric turbine generator units.

Outfall 001

The Libby Dam Project Wastewater Treatment Plant (WWTP) is a two-stage biological package treatment plant housed completely within the confines of the dam powerhouse. Treatment works include a grinder pump, a 1,000 gallon concrete aeration chamber followed by an 840 gallon clarifier/settling basin with a chlorine contact chamber. Chlorination is available but not utilized at the facility. Passive discharge of the treated effluent is to the afterbay of the powerhouse approximately 280 feet downriver from the dam on the west bank of the Kootenai River.

Design capacity for the system is 0.006 million gallons per day. The WWTP treats the domestic wastewater from approximately 30 employees, one public restroom open year-round with a population equivalent of 74 people, kitchen and laundry facilities, wash sinks and floor drains. Seasonally, the WWTP accepts wastewater from the visitors' center restrooms and three public area bathrooms. The WWTP discharges between 850 and 2,520 gallons of treated wastewater per day (Renewal Application, March 2008).

Sludge removed from the system is disposed of at Glacier Gold Compost facility. The permittee maintains authorization MTG650057 under EPA Region VIII Permit Number MTG650000, General Permit for Facilities/Operations that Generate, Treat, and/or Use/Dispose of Sewage Sludge by Means of Land Application, Landfill, and Surface Disposal Under the National Pollutant Discharge Elimination System.

Table 1 is a summary of the USACE Libby Dam WWTP design criteria from the permittee.

Table 1. Current Design Criteria Summary – USACE Libby Dam Project WWTP

Facility Description: 2-stage, activated sludge package plant with chlorine disinfection capabilities.	
Construction Date: 1973	Modification Date: NA
Design Year: NA	
Design Population: ~75	2006 Population Served: ~75
Design Flow, Average (mgd): 0.006	Design Flow, Peak (mgd): Unknown
Minimum Detention Time: 0.3 days	
Design BOD Removal (%): Unknown	Design BOD Load (lb/day): 12.5
Design SS Removal (%): Unknown	Design SS Load (lb/day): 12.5
Design TN Removal (%): Unknown	Design TN Load (lb/day): Unknown
Design TP Removal (%): Unknown	Design TP Load (lb/day): Unknown
Collection System: Combined [] Separate [X]	
SSO Events (Y/N): Yes	Number: One reported
Bypass Events: Yes	Number: One reported
Inflow and Infiltration contribution (mgd): not quantified	Source: Dam raw water from drains and sumps
Disinfection: Yes, but not utilized	Type: Chlorine with contact chamber
Discharge Method: Daily batch releases of 840 gallons each	
Effluent Flow Primary Device: None, use volumetric calculations	
Effluent Secondary Flow Device: None	
Sludge Storage: None	
Sludge Disposal: Yes, as necessary	EPA Authorization Number: MTG650057

Outfall 002

The Powerhouse Drainage Sump (PDS) collects water from leakage in the five turbine units, powerhouse floor drains, and the transformer containment drains. It provides for collection and separation of any prospective oil or grease from the following sources:

- Turbine oil from the any of the five generator units;
- Grease from the turbine wicket gates; and
- PCB-free transformer oil from the transformer containment area.

The PDS has a permanently installed oil skimmer in place to remove any residual oil and grease from PDS before it discharges at approximately 380 gpm to the river on the downstream side of the powerhouse. The discharge is monitored by a Turner Designs TD-4100 hydrocarbon sensor (calibrated for the turbine oil range) and alarms when the discharge water contains hydrocarbon product above 5 mg/L (low alarm setting) and 9 mg/L (high alarm setting). Discharge is via a 6-inch pipe to the mainstem Kootenai River immediately downstream of the dam powerhouse.

Outfall 003A through E

The turbine generator cooling system uses approximately 500 gallons per minute (gpm, 0.72 mgd) of reservoir water from the powerhouse penstock for each operating turbine unit. This is a once through, non-contact cooling water (nccw) system with no known additives. The nccw discharge is mixed with penstock water in the dam tailrace immediately downstream of the powerhouse. If all five generators are in operation, the discharge of nccw totals approximately 3.6 mgd. In contrast, the flow in each individual turbine unit penstock is on the order of 3.2 billion gallons per day.

Additional Discharges

The renewal application describes additional discharges associated with the facility:

- The dam facility west parking lot storm drain pipe discharges into the river downstream of the powerhouse. There are fuel tanks in the west parking lot.

The Libby Dam Project is an electrical generating facility under Standard Industrial Classification code 4911 (Office of Management and Budget, Standards Industrial Classification Manual, 1987). In accordance with ARM 17.30.1102(29), this facility is not an industrial activity subject to the storm water permit requirements of Title 17, Chapter 30, Subchapter 11. Best management practices for storm water control are in place to address storm water discharges. The permittee maintains an Oil Pollution Prevention Spill Prevention, Control and Countermeasure plan as required by 40 CFR 112.

B. Effluent Characteristics

Effluent data from the facility Discharge Monitoring Reports (DMR) for the Period of Record (POR) June 2002 through June 2007 are summarized in Table 2. The one time sampling event of Outfall 002 for the updated application showed less than 1 mg/L for Chemical Oxygen Demand; less than 1.0 mg/L for oil and grease (hexane extractable); and less than 1.0 mg/L for Total Organic Carbon. There are no data available regarding Outfall 003A through E discharges.

Table 2: Outfall 001 DMR Effluent Characteristics⁽¹⁾ for POR June 2002 through June 2007							
Parameter	Location	Units	Previous Permit Limit (7-d/30-d)	Minimum Value	Maximum Value	Average Value	Number of Samples
Flow, Daily Average	Effluent	mgd	-- ⁽²⁾	0.00084	0.00252	0.00084	61
Biochemical Oxygen Demand (BOD ₅)	Influent	mg/L	-- ⁽³⁾	--	--	--	0
	Effluent	mg/L	45/30	<2.0	6.5	1.8	60
	Effluent	% removal	-- ⁽³⁾	--	--	--	0
	Effluent	lb/day	1.5 ⁽⁴⁾	0.001	0.05	0.01	60
Total Suspended Solids (TSS)	Influent	mg/L	-- ⁽³⁾	--	--	--	0
	Effluent	mg/L	45/30	<1.0	50	6.1	60
	Effluent	% removal	-- ⁽³⁾	--	--	--	0
	Effluent	lb/day	1.5 ⁽⁴⁾	0.01	0.30	0.04	60
Fecal Coliform Bacteria ⁽⁶⁾	Effluent	Number per 100 mL	-- ⁽³⁾	--	--	--	0
pH (median value)	Effluent	s.u.	6.0 to 9.0	6.9	7.8	7.3	59
Temperature	Effluent	°C	-- ⁽³⁾	--	--	--	0
Total Residual Chlorine	Effluent	mg/L	-- ⁽³⁾	--	--	--	0
Total Ammonia as N	Effluent	mg/L	-- ⁽²⁾	0.01	1.1	0.19	60
Total Kjeldahl Nitrogen	Effluent	mg/L	-- ⁽²⁾	0.22	2.85	0.85	61
Nitrate + Nitrite as N	Effluent	mg/L	-- ⁽²⁾	14.9	47.5	35.6	61
Total Nitrogen ⁽⁷⁾	Effluent	mg/L	-- ⁽²⁾	15.6	48.2	36.4	61
		lb/day	2.1 ⁽⁴⁾	0.10	0.34	0.26	61
Total Phosphorus as P	Effluent	mg/L	-- ⁽²⁾	3.73	14.3	9.11	61
		lb/day	0.5 ⁽⁴⁾	0.03	0.10	0.06	61
Dissolved Oxygen	Effluent	mg/L	-- ⁽³⁾	--	--	--	0
Oil and Grease	Effluent	mg/L	-- ⁽³⁾	--	--	--	0
Total Dissolved Solids	Effluent	mg/L	-- ⁽³⁾	--	--	--	0
Footnotes:							
(1) Conventional and Non-conventional Pollutants only, table does not include information on toxic pollutants.							
(2) No effluent limit in previous permit, monitoring requirement only.							
(3) No limit or monitoring requirement in previous permit.							
(4) Nondegradation Annual Average Load Value, not permit limitation.							
(5) Sample period is April 1 through October 31.							
(6) Instantaneous/Daily Maximum Value.							
(7) Calculated as the sum of TKN and Nitrite + Nitrate-N concentrations.							

C. Compliance History

Exceedences of TSS limitations occurred in August 2002 and May 2003 at 50 and 36 mg/L, respectively. The permittee did not provide an explanation for the effluent limit violations.

An MPDES compliance inspection conducted on June 16, 2004, identified the need to:

- Adhere to 40 CFR 136 procedures;
- Records management deficiencies; and
- Obtain authorization under EPA Region VIII permit number MTG650000, General Permit for Facilities/Operations that Generate, Treat, and/or Use/Dispose of Sewage Sludge by Means of Land Application, Landfill, and Surface Disposal Under the National Pollutant Discharge Elimination System.

The November 28, 2006 compliance inspection resulted in violations of the permit for:

- The discharge of untreated or partially treated wastewater from a location other than as authorized by permit and an unanticipated by-pass of the treatment facility resulting in the release of untreated wastewater to the river via a facility sump. This occurred when untreated wastewater overflowed the influent box due to a clogged screen. The wastewater flowed down a staircase and into a floor sump and was subsequently discharged to the river downstream of the dam. Personnel not familiar with the WWTP were filling in while the certified operator was off site. This was not reported to the regulating authority.
- Failure to adhere to 40 CFR 136 procedures; and
- Failure to maintain permit-required records.

III. Proposed Technology-based Effluent Limits (TBELs)

A. Applicability

Outfall 001

The Board of Environmental Review has adopted by reference 40 CFR 133 which sets minimum treatment requirements for secondary treatment or equivalent for publicly owned treatment works [ARM 17.30.1209]. National Secondary Standards (NSS) as described in 40 CFR 133 are incorporated into applicable discharge permits. Secondary treatment is defined in terms of effluent quality as measured by BOD₅, TSS, percent removal of BOD₅ and TSS, and pH.

The regulations in 40 CFR 133.105 allow for the application of treatment equivalent-to-secondary effluent limitations (TES) to facilities that meet specific criteria. To qualify for treatment equivalent-to-secondary (TES), the facility must use either a trickling filter or waste stabilization pond as the principle process of treatment as stated in 40 CFR 133.101(g)(2) and the treatment works must also provide significant biological treatment of the wastewater [40 CFR 133.101(g)(3)]. Significant biological treatment is defined as aerobic or anaerobic treatment that consistently achieves 65%

removal of BOD₅ [40 CFR 133.101(k)]. The Libby Dam WWTP is an activated sludge package plant and hence does not qualify for consideration for TES.

NSS limitations will be applied to the discharge at Outfall 001. Prior to this permit cycle, the permittee was not required to monitor the BOD₅ or TSS percent removal criteria. BOD₅ and TSS percent removal requirements based on NSS (85%) and monitoring will be implemented with this permit renewal [40 CFR 136.102(a) & (b)].

Outfalls 002 and 003A through E

There are no TBELs associated with the discharges from Outfalls 002 and 003A through E.

B. Mass-based Limitations

ARM 17.30.1345(8) requires that all effluent limits be expressed in terms of mass.

Outfall 001

The following equation was used to calculate the BOD₅ and TSS 7-day and 30-day mass-based limitations using the TBELs as proposed above:

$$\text{Load (lb/day)} = \text{Design Flow} \times \text{Concentration Limit (mg/L)} \times 8.34 \text{ (lb}\cdot\text{L)/(mg}\cdot\text{gal)}$$

BOD₅ and TSS Mass-based Load Limitation:

$$\text{30-day average BOD}_5 \text{ load (lb/d)} = (0.006 \text{ mgd})(30 \text{ mg/L})(8.34) = 1.5 \text{ lb/d}$$

$$\text{7-day average BOD}_5 \text{ load (lb/d)} = (0.006 \text{ mgd})(45 \text{ mg/L})(8.34) = 2.25 \text{ lb/d}$$

Outfalls 002 and 003A through E

There are no effluent limits to be expressed in terms of mass associated with these discharges.

C. Nondegradation Load Allocations

The provisions of ARM 17.30.701 - 718 (Nondegradation of Water Quality) apply to new or increased sources of pollution [ARM 17.30.702(18)]. Sources that are in compliance with the conditions of their permit and do not exceed the limits established in the permit or determined from a permit previously issued by the Department are not considered new or increased sources.

Nondegradation threshold values for the Libby Dam WWTP were calculated for BOD₅, TSS, total nitrogen (TN) and total phosphorus as P (TP) during issuance of the permit in 1994. The BOD₅ and TSS allocations were based on the design flow of 0.006 mgd. The TN and TP allocations (2.1 lb/d and 0.5 lb/d, respectively) were calculated using a population equivalent of 74 people. The nondegradation load allocations in the renewed permit will remain at these values.

The nondegradation load allocations and the actual average loads discharged from the facility for the period of record (POR) January 2002 through November 2006 are presented below. Actual loads for

BOD₅, TSS, TN, and TP were obtained from the facility DMRs. These data indicate that the facility did not exceed the nondegradation load values calculated for TSS, TN and TP and is not an increased source.

Table 4. Outfall 001 Nondegradation and Actual Loads for POR

Nondegradation Allocated Load Limits			Actual 30-day Average Loads (lb/day)					
Parameter	Units	Annual Average Load	2002	2003	2004	2005	2006	2007
BOD ₅	lb/day	1.5	0.02	0.02	0.02	0.01	0.02	0.02
TSS	lb/day	1.5	0.06	0.1	0.03	0.04	0.04	0.04
TN	lb/day	2.1	0.28	0.25	0.23	0.28	0.29	0.24
TP as P	lb/day	0.5	0.05	0.06	0.06	0.06	0.06	0.07

D. Proposed TBELS

Table 5. Outfall 001 Proposed TBELS

Parameter	Concentration (mg/L)		Load (lb/day)	
	Weekly Average ⁽¹⁾	Monthly Average ⁽¹⁾	Weekly Average ⁽¹⁾	Monthly Average ⁽¹⁾
BOD ₅	45	30	2.25	1.5
TSS	45	30	2.25	1.5
pH, s.u	Within the range of 6.0 to 9.0 (instantaneous)			
BOD ₅ Percent Removal ⁽¹⁾ (%)	85 %			
TSS Percent Removal ⁽¹⁾ (%)	85 %			
(1) See Definition section at end of permit for explanation of terms				

There are no TBELs associated with the discharges from Outfalls 002 and 003A through E.

IV. Water Quality-based Effluent Limits (WQBELs)

A. Scope and Authority

The Montana Water Quality Act (Act) states that a permit may only be issued if the Department finds that the issuance or continuance of the permit will not result in pollution of any state waters [75-5-401(2), Montana Code Annotated (MCA)]. Montana water quality standards at ARM 17.30.637(2) require that no wastes may be discharged such that the waste either alone or in combination with other wastes will violate or can reasonably be expected to violate any standard. ARM 17.30.1344(1) adopts by reference 40 CFR 122.44 which states that MPDES permits shall include limits on all pollutants which will cause, or have a reasonable potential to cause an excursion

of any water quality standard, including narrative standards. The purpose of this section is to provide a basis and rationale for establishing WQBEL effluent limits, based on Montana water quality standards that will protect designated uses of the receiving stream.

The Act authorizes the issuance of point source discharge permits on a listed water body pending completion of a TMDL provided that: 1) the discharge is in compliance with the provisions of 75-5-303 (Nondegradation Policy), MCA; 2) the discharge will not cause a decline in water quality for the parameters for which the water body is listed; and, 3) the minimum treatment requirements under 75-5-703(10), MCA are met.

B. Receiving Water

The Kootenai River is the receiving water for the Libby Dam Project discharges. The Kootenai River is identified as USGS Hydrologic Unit Code (HUC) 17010101, Kootenai River from the Libby Dam to Yaak River confluence, and Montana stream segment MT76D001_010. The river is classified as B-1 [ARM 17.30.609(1)(a)]. Class B-1 waters are to be maintained suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply [ARM 17.30.623(1)].

The 1996 and 2006 303(d) lists cite this segment of the Kootenai River as partially supportive of aquatic life support and cold water fisheries-trout. Probable causes of impairment on both lists include flow alteration and thermal modification. The probable sources in 1996 and 2006 are listed as dam construction, flow regulation/ modification, and upstream impoundment.

The United States Geological Service (USGS) collects flow and other data for the Kootenai River at gauging station number 12301933 Kootenai River below Libby Dam near Libby, Montana. The 7-day, 10-year low flow (7Q10) for the regulated period of flow after the construction of Libby Dam is 2,640 cubic feet per second (cfs), 1,705 mgd. The 1994-developed permit established the 7Q10 at 2,826 cfs for the flow after the construction of the dam. The low flow condition will be established at 2,640 cfs (1,705 mgd) for this permit cycle

For Outfall 001, this results in a dilution ratio of 284,240 (1,705 mgd/0.006 mgd, the 7Q10 compared to the design discharge flow for the facility). For Outfall 002, the dilution ratio is 3,117 (1,705 mgd/0.547 mgd). For Outfall 003A through E, the dilution ratio is 2,368 with one generator in operation (1,705/0.72 mgd); 1,184 with two generators operating; 789 when three generators are on-line; 592 at four generators; and 474 with all five generators in operation.

The Montana Department of Fish, Wildlife, and Parks Montana Fisheries Information System database describes the Kootenai River above Libby Creek (river mile 97.9) to the dam (river mile 114.5) as an area of outstanding fisheries resource value for both habitat and sports classifications (September 2007). Abundant fish species present year-round include the Torrent sculpin, mountain whitefish, largescale sucker, and Rainbow trout. Common species present year-round are the Kokanee, bull trout, longnose dace, and reidside shiner. Incidental and rare species present can be the brook trout, burbot, longnose sucker, northern pike minnow, peamouth, and slimy sculpin.

Ambient water quality data for the Kootenai River were obtained from USGS gauging station 12301919 Lake Koocanusa at Forebay (May 2000 through September 2004). The data are summarized in Table 6.

Table 6. Kootenai River Ambient Water Quality Monitoring Data

Parameter	Units	Minimum Value	Maximum Value	Long Term Average	Number of Samples
pH, median value	s.u.	7.0	9.5	8.0	1,223
Temperature	°C	1.5	20.6	9.3	1,243
Total Ammonia as N	mg/L	<0.010	0.017	0.012	59
Nitrate/Nitrite as N	mg/L	<0.01	0.22	0.09	58
Total Nitrogen	mg/L	0.14	2.10	0.54	97
Total Phosphorus as P	mg/L	<0.001	0.263	0.006	340
Dissolved Oxygen	mg/L	6.9	13.9	9.8	1,220

C. Applicable Water Quality Standards

Discharges to surface waters classified B-1 are subject to the specific water quality standards of ARM 17.30.623 (March 31, 2006), Department Circular DEQ-7 (February 2006), as well as the general provision of ARM 17.30.635 through 637, 641, 645, and 646. In addition to these standards, dischargers are also subject to ARM 17.30 Subchapter 5 (Mixing Zones, November 2004) and Subchapter 7 (Nondegradation of Water Quality, June 30, 2004).

D. Mixing Zone

A mixing zone is an area where the effluent mixes with the receiving water and certain water quality standards may be exceeded [ARM 17.30.502(6)]. The Department must determine the applicability of currently granted mixing zones [ARM 17.30.505(1)]. Mixing zones allowed under a permit issued prior to April 29, 1993 will remain in effect unless there is evidence that previously allowed mixing zones will impair existing or anticipated uses [ARM 17.30.505(1)(c)].

In accordance with ARM 17.30.517(1)(b), acute water quality standards for aquatic life may not be exceeded in any portion of the mixing zone unless the Department finds that allowing minimal initial dilution will not threaten or impair existing uses. The discharge must also comply with the general prohibitions of ARM 17.30.637(1) which require that state waters, including mixing zones, must be free from substances which will:

- (b) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines;
- (c) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials;
- (d) produce odors, colors or other conditions as to which create a nuisance or render undesirable tastes to fish flesh or make fish inedible;

- (e) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; and
- (f) create conditions which produce undesirable aquatic life.

No mixing zone will be granted that will impair beneficial uses [ARM 17.30.506(1)]. Aquatic life-chronic, aquatic life-acute and human health standards may not be exceeded outside of the mixing zone [ARM 17.30.507(1)(a)]. Acute standards may not be exceeded in any part of the mixing zone [ARM 17.30.507(1)(b)], unless the Department finds that there is no lethality to aquatic organisms passing through the mixing zone.

A standard mixing zone may be granted if the discharge to surface water is small in comparison to the volume of the receiving water [ARM 17.30.516(1)(d)], for facilities which discharge less than one mgd, or when mixing is nearly instantaneous. Nearly instantaneous mixing is assumed if the discharge is through an effluent diffuser, when the mean daily flow exceeds the 7-day, 10-year low flow (dilution ratio <1) or the permittee demonstrates through a Department approved study plan that the discharge is nearly instantaneous. A nearly instantaneous mixing zone may not extend downstream more than two (2) river widths.

Effluent discharges which do not qualify for a standard mixing zone must apply for a source specific mixing zone in accordance with ARM 17.30.518 and must conform to the requirements of 75-5-301(4), MCA which states that mixing zones must be the smallest practicable size; have minimal effects on uses; and, have definable boundaries. ARM 17.30.515(2) states that a person applying for a mixing zone must indicate the type of mixing zone and provide sufficient detail for the Department to make a determination regarding the authorization of the mixing zone under the rules of Subchapter 5.

Outfall 001

The Libby Dam Project WWTP design discharge flow is less than 1.0 mgd (0.006 mgd) and the dilution ratio is greater than 100:1 (284,240). A standard mixing zone may be granted if the discharge to surface water is small in comparison to the volume of the receiving water [ARM 17.30.516(1)(d)]. The discharge qualifies for a standard mixing zone and the Department will use the full 7Q10 dilution flow of 1,705 mgd to develop chronic effluent limitations where applicable [ARM 17.30.516(3)(a)].

The previous permit identified the standard mixing zone at 8,000 feet in length down river from the outfall location, approximately ten times the stream width at 7Q10. The large dilution ratio was cited as the basis for not applying limitations to fecal coliform bacteria, total residual chlorine, or total ammonia as N. This permit renewal will continue to define the standard mixing zone at 8,000 feet downstream of the point of discharge. However, this permit will include limitations for *Escherichia coli* (*E. coli*) bacteria and total residual chlorine as those standards are applied to the discharge at the end of pipe.

Outfall 002

The PDS discharge is less than 1.0 mgd (approximately 0.547 mgd) and the dilution ratio is greater than 100:1 (3,117). A standard mixing zone may be granted if the discharge to surface water is small in comparison to the volume of the receiving water [ARM 17.30.516(1)(d)]. The discharge qualifies for a standard mixing zone and the Department will use the full 7Q10 dilution flow of 1,705 mgd to develop chronic effluent limitations where applicable [ARM 17.30.516(3)(a)].

The mixing zone has not been described previously for this outfall. The standard mixing zone will be defined at 8,000 feet in length down river from the outfall location to a point approximately ten times the stream width at 7Q10 and to coincide with the mixing zone for Outfalls 001.

Outfall 003A through E

The Libby Dam Project generator cooling water discharge flow is dependent on the number of generators in operation. To assure an appropriate mixing zone for the nccw discharges, the mixing zone will be developed with all five generators in operation. The daily flow for the full discharge is approximately 3.6 mgd. The dilution ratio is 474. A standard mixing zone may be granted if the discharge to surface water is small in comparison to the volume of the receiving water [ARM 17.30.516(1)(d)]. The discharge qualifies for a standard mixing zone. The Department will use the full 7Q10 dilution flow of 1,705 mgd to develop chronic effluent limitations where applicable [ARM 17.30.516(3)(a)].

The mixing zone has not been described previously for this outfall. The standard mixing zone will be defined at 8,000 feet in length down river from the outfall location to a point approximately ten times the stream width at 7Q10 and to coincide with the mixing zone for Outfalls 001 and 002.

E. Basis and Proposed Water Quality-based Effluent Limits (WQBELs)

ARM 17.30.1345 requires WQBELs to be developed for any pollutant for which there is reasonable potential (RP) for discharges to cause or contribute to exceedences of instream numeric or narrative water quality standards. RP calculations utilize the receiving water concentration, the maximum projected effluent concentration, the design flow of the wastewater treatment facility, and the applicable receiving water flow.

The Department uses a mass balance equation to determine RP (*Equation 1*).

$$C_{RP} = \frac{C_E Q_E + C_S Q_S}{Q_E + Q_S} \quad (Eq. 1)$$

Where:

- C_{RP} = receiving water concentration (RWC) after mixing, mg/L
- C_E = maximum projected effluent concentration, mg/L
- C_S = RWC upstream of discharge, mg/L
- Q_S = applicable receiving water flow, mgd
- Q_E = facility design flow rate, mgd

Outfall 001

Parameters typically present in sewage wastewaters that may cause or contribute to a violation of water quality standards include the conventional pollutants such as biological material (as measured by BOD₅), suspended solids, oil & grease, pathogenic bacteria, and pH; the non-conventional pollutants such as total residual chlorine, total ammonia, total nitrogen, and total phosphorus; and the carcinogenic and toxic pollutants such as and metals.

1. Conventional Pollutants

Total Suspended Solids (TSS), Biological Oxygen Demand (BOD₅), and pH - The facility provides a significant reduction in biological material and solids through secondary treatment (Section III). The permittee will be required to meet the 85 percent removal limitations for BOD₅ and TSS. No additional WQBELs will be required for these parameters.

Oil and Grease (O&G) - The previous permit did not limit O & G in the effluent. No monitoring for this parameter has been performed. Due to the use of kitchen and laundry facilities and wash sinks on site, oils and greases can be treated by the WWTP. No monitoring of the effluent for O&G has ever been performed at the facility. Quarterly monitoring for O & G will be conducted. No concentration limit will be implemented at this time.

Escherichia coli (E. coli) Bacteria - In past permit cycles, the WWTP effluent has had no bacteria limits or monitoring requirements in effect. The permit will incorporate the Montana state standards for *Escherichia coli (E. coli)* (Circular DEQ-7, February 2006). The applicable standards for *E. coli* are:

- a. April 1 through October 31, of each year, the geometric mean number of the microbial species *E. coli* must not exceed 126 colony forming units (cfu) per 100 milliliters (mL), nor are 10% of the total samples during any 30-day period to exceed 252 cfu per 100 mL (ARM 17.30.623(2)(a)(i)); and
- b. November 1 through March 31, of each year, the geometric mean number of *E. coli* shall not exceed 630 cfu per 100 mL and 10% of the samples during any 30-day period may not exceed 1,260 cfu per 100 mL (ARM 17.30.623(2)(a)(ii)).

ARM 17.30.505(2) states that if the Department determines that a mixing zone may interfere with or threaten a beneficial use, discharge limitations will be modified and if necessary, require the applicable numeric water quality criteria to be met at the end of the discharge pipe. The Department is not granting a mixing zone for *E. coli* bacteria based on the following consideration; ARM 17.30.637(1)(e) which requires that state waters must be free from substances that are harmful or toxic to humans.

The facility has chlorine disinfection capabilities that have not been used. To meet the new *E. coli* bacteria limits, interim limitations allowing the permittee to bring the necessary systems on-line to provide year-round disinfection will be included in this permit. Through December 31, 2009, no

limitations on *E. coli* bacteria numbers will be implemented but interim weekly monitoring for *E. coli* bacteria will be required. Starting January 1, 2010, the final *E. coli* bacteria limitations will become effective.

2. Nonconventional Pollutants

Total Ammonia as N - Total ammonia as N limits are developed based on standards that account for a combination of pH and temperature of the receiving stream, the presence or absence of salmonid species, and the presence or absence of fish in early life stages. Because pH and temperature can vary greatly on a seasonal basis, as can the presence or absence of fish in early life stages, DEQ Circular DEQ-7 (February 2006) allows for the determination of ammonia standards and the resulting limits on a seasonal basis. Salmonid fishes and their early life stages are presumed present year-round.

Table 8, presents the total ammonia as N water quality standards for the Kootenai River using the ambient Kootenai River water quality data in Table 6.

Table 8. Total Ammonia-N Water Quality Standards for Receiving Water.

Condition	Period ⁽¹⁾	Salmonids Present	Early Life Stages Present	Ambient Condition		Water Quality Standard ⁽²⁾
				pH	Temperature °C	
Acute	Annual	Yes	NA	8.6 ⁽³⁾	NA	1.77
Chronic	Summer	Yes	Yes	8.2 ⁽⁴⁾	13.0 ⁽⁴⁾	1.79
Chronic	Winter	Yes	Yes	8.1 ⁽⁴⁾	7.5 ⁽⁴⁾	2.10

Footnotes: NA – Not Applicable
 (1) Winter period is taken to be November 1 through March 31; summer period is taken to be April 1 through October 31.
 (2) Acute - maximum daily; Chronic - 30-day average concentration.
 (3) Based on 95th percentile of annual data.
 (4) Based on 75th percentile of values in the applicable period.

The maximum reported effluent total ammonia as N value, 1.1 mg/L, does not exceed the state standards for total ammonia as N and RP does not exist for this parameter. Neither limits, nor a defined mixing zone, are necessary for total ammonia as N.

Nitrate Plus Nitrite as Nitrogen (NO_{2/3}⁻) –Nitrate is an oxidized form of nitrogen which is a prevalent pollutant in treated domestic wastewater. Activated sludge treatment is a secondary biological process that uses oxidation to treat domestic wastewater and produces nitrate nitrogen. Nitrite nitrogen is not normally present in measurable quantities in treated municipal wastewater. The state standard for nitrate as nitrogen for surface water is 10 mg/L (DEQ-7, February 2006). The maximum reported nitrate plus nitrite as nitrogen (NO_{2/3}⁻) value, 47.5 mg/L, exceeds the state standard for nitrate as nitrogen.

To determine if the NO_{2/3}⁻ concentrations in the effluent will create an exceedence of the state standard in the Kootenai River after mixing, a reasonable potential (RP) analysis was completed using *Equation 1*, where:

C_{RP} =	Receiving water concentration (RWC) after mixing, mg/L
C_E =	Projected maximum effluent concentration, 52.3 mg/L
C_S =	Receiving water concentration, 0.09 mg/L
Q_S =	Applicable receiving water flow, 1,705 mgd
Q_E =	Facility design flow rate, 0.006 mgd

The projected maximum concentration for $\text{NO}_{2/3}^-$ was found following the method recommended by the EPA in the “Technical Support Document for Water Quality-Based Toxics Control” (1991). A coefficient of variation (CV), 0.16, was calculated by dividing the standard deviation (5.51 mg/L) by average concentration (35.61 mg/L), based on self-reported $\text{NO}_{2/3}$ concentrations. A multiplier of 1.1 was determined using Table 3-2 in the TSD (given a CV of 0.155, a sample size of 61 at the 95% confidence interval.) The maximum reported effluent $\text{NO}_{2/3}^-$ was 47.5 mg/L. The multiplier times the maximum concentration (1.1×47.5 mg/L) is 52.3 mg/L.

$$C_{RP} = \frac{(0.006 \times 52.3) + (1,705 \times 0.09)}{(0.006 + 1,705)} = 0.09 \text{ mg/L } \text{NO}_{2/3}^- \text{ as N}$$

The resulting downstream mixed concentration, 0.09 mg/L, is below the standard of 10 mg/L therefore, RP does not exist for this parameter and no limit is necessary.

Nutrients [Total Nitrogen (TN) and Total Phosphorus as P (TP)]: The Kootenai River in the area of discharge is not listed as impaired for nutrients. The Libby Dam WWTP discharge is a minor point source with a substantial dilution ratio. No limits for TN and TP are necessary. The permittee will be expected to continue monitoring the effluent at a reduced frequency for TN and TP during this permit cycle.

Dissolved Oxygen (DO) – The Kootenai River is not listed as impaired for organic enrichment/DO at Libby Dam. Review of available instream DO data for above and below Libby Dam shows DO levels in the Kootenai River average 9.9 mg/L in Lake Koocanusa at the dam forebay and 10.4 mg/L downstream of the dam. The Libby Dam WWTP discharge is a minor point source with a substantial dilution ratio. No limit or monitoring for DO in the effluent is necessary.

Total Residual Chlorine (TRC) - The facility does not currently use its disinfection capabilities. In the event chlorination is utilized as the method of disinfection, the effluent total residual chlorine average monthly limit will be 0.011 mg/L and the maximum daily limitation will be 0.019 mg/L at the end of pipe.

Analytical methods in 40 CFR Part 136 requires chlorine samples to be analyzed immediately. On-site sampling for total residual chlorine with a chlorine meter using an approved method is required. The method must achieve a minimum detection level of 0.02 mg/L. Sampling of effluent discharging from the lagoons, with analytical results less than 0.02 mg/L is considered in compliance with the chlorine limit

3. Toxic Pollutants

ARM 17.30.623(2)(h) states that concentrations of carcinogenic, bio-concentrating, toxic, or harmful parameters which would remain in the water after conventional treatment may not exceed the applicable standards specified in Department Circular DEQ-7 (February 2006).

Total Recoverable Metals – Metals are not expected to be pollutants of concern for this outfall. The Libby Dam Project WWTP discharge is a minor point source with a substantial dilution ratio. No limitations or monitoring for metals are proposed for this permit cycle.

Whole Effluent Toxicity (WET) Testing - ARM 17.30.637(1)(d) requires that state water be free from substances attributable to municipal waste that create condition which are harmful or toxic to human, animal, plant or aquatic life, except the Department may allow limited toxicity in a mixing zone provided that there is no acuter lethality to organisms.

The Libby Dam Project WWTP is a small discharge of less than 0.1 mgd into the main flow of the river with a substantial dilution ratio; toxicity is unlikely in the mixing zone. No WET testing will be required with this permit cycle.

Outfall 002

There are no sources of biological materials to the PDS discharge. However, due to the presence of turbine oils and greases on site, oil and grease and volatile organic compounds are of concern for PDS discharges.

1. Conventional Pollutants

Total Suspended Solids (TSS), Biological Oxygen Demand (BOD₅), *Escherichia coli* (*E. coli*) Bacteria – there are no sources of these pollutants in the discharges; no monitoring or limitations are proposed at this time.

pH –Pursuant to ARM 17.30.623(2)(c), the induced variation of hydrogen ion concentration within the range of 6.5 to 8.5 must be less than 0.5 pH units. Natural pH outside this range must be maintained without change. Natural pH above 7.0 must be maintained above 7.0. Because no monitoring for pH has been performed in the past, the permittee will be expected to monitor pH in the PDS discharge.

Oil and Grease (O&G) - No monitoring for this parameter has been performed on this discharge. There is a lack of information available to perform an RP assessment. Due to the potential for the presence of turbine oils and greases in these discharges, quarterly monitoring for O&G will be conducted on both discharges after the oil skimmers. No concentration limit will be implemented at this time.

2. Non-Conventional Pollutants

Total Ammonia as N, Nutrients [Total Nitrogen and Total Phosphorus as P, Dissolved Oxygen (DO), Total Residual Chlorine (TRC)] – there are no sources of these pollutants in the discharges, no monitoring or limitations are proposed at this time

3. Toxic Pollutants

ARM 17.30.623(2)(h) states that concentrations of carcinogenic, bio-concentrating, toxic, or harmful parameters which would remain in the water after conventional treatment may not exceed the applicable standards specified in Department Circular DEQ-7 (February 2006).

Total Recoverable Metals – Monitoring for metals in the PDS effluents has not been performed previously at this facility. There is a lack of information available to perform an RP assessment. However, metals are not expected to be pollutants of concern for this outfall except as related to potential equipment wear. No limitations or monitoring for metals are proposed for this permit cycle. The permittee will be required to perform the applicable metals analyses to support the renewal application process in the future.

Organic Substances - The PDS discharge has the potential to contain O&G, as discussed in Section II. A. of this Statement of Basis. No monitoring for organic substances has been performed on this outfall and RP cannot be assessed. The permittee has installed an oil skimmer to provide treatment of sump waters prior to discharge. Outfall 002 discharges into the main flow of the river with a substantial dilution ratio (3,117); toxicity is unlikely in the mixing zone. The permittee will be required to perform the applicable organic substances analyses to support the renewal application process in the future.

Whole Effluent Toxicity (WET) Testing - ARM 17.30.637(1)(d) requires that state water be free from substances attributable to municipal waste that create condition which are harmful or toxic to human, animal, plant or aquatic life, except the Department may allow limited toxicity in a mixing zone provided that there is no acuter lethality to organisms. The combined discharges from Outfalls 002 and 003 approximate a 0.33 mgd discharge into the main flow of the river with a substantial dilution ratio (>777); toxicity is unlikely in the mixing zone. No WET testing will be required with this permit cycle.

Outfall 003A through E

The once-through non-contact cooling water discharges associated with each generator unit have no known additives or pollutant sources except temperature. Discharge flow is approximately 0.72 mgd per unit, for a maximum discharge of 3.5 mgd when all five units are in operation. The dilution ratio when all five generators are running is approximately 97.

Temperature – Since 1972, the Libby Dam Project has released water from the selective withdrawal release structure, allowing for control of releases to mimic the natural thermal regime in the downstream waters. The renewal application describes that the dam operators balance the temperature input from the nccw discharges with the use of the selective withdrawal structure.

The receiving water is not currently listed as impaired for temperature on the 303(d) list. There are no data regarding temperature for these discharges, and RP cannot be assessed at this time. The permittee will be expected to continuously monitor and report effluent temperature for each individual generator nccw discharge during this permit cycle. Maximum daily, minimum daily, and average monthly temperatures for each generator (A through E) will be reported on the discharge monitoring reports. No temperature limit will be implemented at this time.

V. Proposed Interim and Final Effluent Limitations

Outfall 001

Interim Limitations

The following final effluent limitations will be applied to the discharge at Outfall 001, upon the effective date of the permit and remain in effect until midnight June 30, 2010.

Parameter	Units	Average Monthly Limit ⁽¹⁾	Average Weekly Limit ⁽¹⁾	Maximum Daily Limit ⁽¹⁾
BOD ₅	mg/L	30	45	NA
	lb/day	1.5	2.25	NA
TSS	mg/L	30	45	NA
	lb/day	1.5	2.25	NA
Footnotes: NA means not applicable. (1) See Definition section at end of permit for explanation of terms.				

pH: Effluent pH from Outfall 001 shall remain between 6.0 and 9.0 standard units (instantaneous minimum and instantaneous maximum). For compliance purposes, any single analysis or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

85 Percent (%) Removal Requirement for BOD₅: The arithmetic mean of the BOD₅ for effluent samples collected in a period of 30 consecutive days shall not exceed 15% of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85% removal). This is in addition to the concentration limitations on BOD₅.

85 Percent (%) Removal Requirement for TSS: The arithmetic mean of the TSS for effluent samples collected in a period of 30 consecutive days shall not exceed 15% of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85% removal). This is in addition to the concentration limitations on TSS.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge which causes visible oil sheen in the receiving stream.

Final Limitations

The following final effluent limitations will be applied to the discharge at Outfall 001, effective July 1, 2010 and remain in effect for the duration of the permit cycle.

Parameter	Units	Average Monthly Limit ⁽¹⁾	Average Weekly Limit ⁽¹⁾	Maximum Daily Limit ⁽¹⁾
BOD ₅	mg/L	30	45	--
	lb/day	1.5	2.25	--
TSS	mg/L	30	45	--
	lb/day	1.5	2.25	--
<i>E. coli</i> Bacteria ^(2,3)	cfu/100 mL	126	--	252
<i>E. coli</i> Bacteria ^(3,4)	cfu/100 mL	630	--	1,260
Total Residual Chlorine	mg/L	0.011	--	0.019
Footnotes: (1) See Definition section at end of permit for explanation of terms. (2) This limit applies during the period April 1 through October 31. (3) Report Geometric Mean if more than one sample is collected during reporting period. (4) This limit applies during the period November 1 through March 31.				

pH: Effluent pH from Outfall 001 shall remain between 6.0 and 9.0 standard units (instantaneous minimum and instantaneous maximum. For compliance purposes, any single analysis or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

85 Percent (%) Removal Requirement for BOD₅: The arithmetic mean of the BOD₅ for effluent samples collected in a period of 30 consecutive days shall not exceed 15% of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85% removal). This is in addition to the concentration limitations on BOD₅.

85 Percent (%) Removal Requirement for TSS: The arithmetic mean of the TSS for effluent samples collected in a period of 30 consecutive days shall not exceed 15% of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85% removal). This is in addition to the concentration limitations on TSS.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge which causes visible oil sheen in the receiving stream.

Outfalls 002 and 003A through E

There are no limits proposed for Outfalls 002 and 003A through E.

V. Self-Monitoring Requirements

All analytical procedures must comply with the specifications of 40 CFR Part 136. Samples shall be collected, preserved and analyzed in accordance with approved procedures listed in 40 CFR 136.

Starting with the effective date of the permit and lasting for the duration of the permit cycle:

- Self-monitoring of effluent discharged at Outfall 001 shall be conducted at the discharge point from the package plant
- Self-monitoring of effluent discharged at Outfall 002 shall be conducted at the discharge point from the installed oil skimmer.
- Monitoring points for the nccw discharges specific to each generator unit (Outfall 003A through E) will be established by the permittee at locations that will provide representative data for the discharges prior to mixing with other discharges or the receiving water.

To adequately assess Outfall 001 discharge compliance with NSS, the influent and effluent samples for self-monitoring purposes will be 24-hour flow-proportioned composite samples. Increased monitoring frequencies of the influent and effluent are considered to be the minima necessary to assess compliance with maximum daily, seven-day and 30-day effluent limitations.

A diagram identifying the sample points to be used is provided as Attachment A. Flow-proportioned composite influent samples will be collected at the influent box to the aeration chamber. Flow-proportioned composite effluent samples will be collected at the last point of control leaving the WWTP, after clarification and at the end of the chlorine contact chamber after potential chlorination.

Outfall 001 Libby Dam WWTP Effluent Monitoring Requirements				
Parameter	Unit	Sample Location	Sample Frequency	Sample Type ⁽¹⁾
Flow	mgd	Effluent	1/Week	Instantaneous
Flow ⁽²⁾	mgd	Effluent	Continuous ⁽²⁾	⁽³⁾
5-Day Biological Oxygen Demand (BOD ₅)	mg/L	Influent ⁽⁴⁾	1/Quarter	Composite
	mg/L	Effluent	1/Week	Composite
	lb/day	Effluent	1/Month	Calculated
	% Removal ⁽⁵⁾	Effluent	1/Quarter	Calculated
Total Suspended Solids (TSS)	mg/L	Influent ⁽⁴⁾	1/Quarter	Composite
	mg/L	Effluent	1/Week	Composite
	lb/day	Effluent	1/Month	Calculated
	% Removal ⁽⁵⁾	Effluent	1/Quarter	Calculated
pH	s.u.	Effluent	1/Week	Instantaneous
Temperature	°C	Effluent	1/Week	Instantaneous
<i>E. coli</i> Bacteria ⁽⁶⁾	cfu/100 mL	Effluent	1/Week	Grab
Total Residual Chlorine ⁽⁷⁾	mg/L	Effluent	Daily	Grab
Total Ammonia as N	mg/L	Effluent	1/Quarter	Composite
Nitrate + Nitrite as N	mg/L	Effluent	1/Quarter	Composite
Total Kjeldahl Nitrogen	mg/L	Effluent	1/Quarter	Composite
Total Nitrogen as N ⁽⁸⁾	mg/L	Effluent	1/Quarter	Calculated
	lb/day	Effluent	1/Quarter	Calculated
Total Phosphorus as P	mg/L	Effluent	1/Quarter	Composite
	lb/day	Effluent	1/Quarter	Calculated
Oil & Grease ⁽⁹⁾	mg/L	Effluent	1/Quarter	Grab
Total Dissolved Solids (TDS)	mg/L	Effluent	1/Quarter	Grab
Footnotes:				
(1) See Definitions section at end of permit for explanation of terms.				
(2) Continuous flow monitoring requirement effective July 1, 2010.				
(3) Requires recording device or totalizer; permittee shall report daily maximum and daily average flow on DMR.				
(4) Influent BOD ₅ and TSS samples shall be collected even if no effluent discharge occurs in the monitoring period.				
(5) Percent (%) Removal shall be calculated using the monthly average values				
(6) Report geometric mean if more than one sample is collected during the reporting period.				
(7) The permittee is only required to sample for total residual chlorine if chlorine is used as a disinfectant in the treatment process. If chlorine is <i>not</i> used, write "NA" on the DMR for this parameter.				
(8) Calculated as the sum of Nitrate + Nitrite as N and Total Kjeldahl Nitrogen concentrations.				
(9) Use EPA Method 1664, Revision A: N-Hexane Extractable Material (HEM), or equivalent.				

Outfall 002 Powerhouse Drainage Sump Effluent Monitoring Requirements				
Parameter	Unit	Sample Location	Sample Frequency	Sample Type ⁽¹⁾
Flow	mgd	Effluent	1/Week	Instantaneous
Flow ⁽²⁾	mgd	Effluent	Continuous ⁽²⁾	⁽³⁾
pH	s.u.	Effluent	1/Week	Instantaneous
Oil & Grease ⁽⁴⁾	mg/L	Effluent	1/Quarter	Grab
Footnotes:				
(1) See Definitions section at end of permit for explanation of terms.				
(2) Continuous flow monitoring requirement effective July 1, 2010.				
(3) Requires recording device or totalizer; permittee shall report daily maximum and daily average flow on DMR.				
(4) Use EPA Method 1664, Revision A: N-Hexane Extractable Material (HEM), or equivalent.				

Outfall 003A through E NCCW Effluent Monitoring Requirements				
Parameter	Unit	Sample Location	Sample Frequency	Sample Type ⁽¹⁾
Flow	mgd	Effluent	1/Week	Instantaneous
Flow ⁽²⁾	mgd	Effluent	Continuous ⁽²⁾	⁽²⁾
Temperature	°F	Effluent	1/Month	Instantaneous
Temperature ⁽³⁾	°F	Effluent	Continuous ⁽³⁾	⁽³⁾
Oil & Grease ⁽⁴⁾	mg/L	Effluent	1/Month	Grab
Footnotes:				
(1) See Definitions section at end of permit for explanation of terms.				
(2) Requires recording device or totalizer effective July 1, 2010. Permittee shall report daily maximum and daily average flow on DMR.				
(3) Continuous temperature monitoring requirement effective July 1, 2010.				
(4) Use EPA Method 1664, Revision A: N-Hexane Extractable Material (HEM), or equivalent.				

VI. Nonsignificance Determination

The proposed effluent limits and discharge flows for the Libby Dam Project do not constitute new or increased sources of pollutants pursuant to ARM 17.30.702(16). Therefore, a nonsignificance analysis is not required [ARM 17.30.705(1)].

VII. Special Conditions

1. Effluent Flow Monitoring

The permittee does not currently have continuous flow monitoring or recording/totalizing capability on Outfalls 001, 002, and 003. A volumetric calculation is performed to determine daily flow. Outfalls 002 and 003A through E have no flow monitoring capabilities installed at this time; pump run times are used to monitor weekly flow by dam operations personnel. A special condition will be included in the permit allowing the permittee to plan for, and install, continuous flow recording/totalizing capabilities on these outfalls by midnight June 30, 2010.

2. Outfall 003A through E Temperature Monitoring

The permittee does not currently monitor turbine generator unit nccw temperatures. The permit will include a requirement to install continuous temperature monitoring capabilities on the nccw for each generator unit by midnight June 30, 2010.

VIII. Other Information

On September 21, 2000, a US District Judge issued an order stating that until all necessary total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act are established for a particular water quality limited segment, the State is not to issue any new permits or increase permitted discharges under the MPDES program. The order was issued under the lawsuit Friends of the Wild Swan vs. US EPA et al, CV 97-35-M-DWM, District of Montana, Missoula Division.

The renewal of this permit does not conflict with Judge Molloy's order because the permitted discharge does not represent a new or increased source of pollutants under the MPDES program.

IX. Information Sources

1. Administrative Rules of Montana Title 17 Chapter 30 - Water Quality
 - a. Sub-Chapter 2 - Water Quality Permit and Application Fees, November 2003.
 - b. Sub-Chapter 5 - Mixing Zones in Surface and Ground Water, November 2004.
 - c. Sub-Chapter 6 - Montana Surface Water Quality Standards and Procedures, September 2004.
 - d. Sub-Chapter 7- Nondegradation of Water Quality, November 2004.
 - e. Sub-Chapter 10 - Montana Ground Water Pollution Control System, September 2004.
 - f. Sub-Chapter 11 - Storm Water Discharges,
 - g. Sub-Chapter 12 - Montana Pollutant Discharge Elimination System (MPDES) Standards, March 2003.
 - h. Sub-Chapter 13 - Montana Pollutant Discharge Elimination System (MPDES) Permits, March 2003.
2. Clean Water Act § 303(d), 33 USC 1313(d) Montana List of Waterbodies in Need of Total Maximum Daily Load Development, 1996 and 2004.
3. Executive Office of the President, Office of Management and Budget, Standard Industrial Classification Manual, 1987.
4. Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251-1387, October 18, 1972, as amended 1973-1983, 1987, 1988, 1990-1992, 1994, 1995, and 1996.
5. Montana Code Annotated Title 75 - Environmental Protection Chapter 5 - Water Quality, October 2002.

6. Montana Department of Environmental Quality Circular DEQ-2, Design Standards for Wastewater Facilities, September 1999.
7. Montana Department of Environmental Quality Circular DEQ-7, Montana Numeric Water Quality Standards, February 2006.
8. Montana Department of Fish Wildlife and Parks *Model Development to Establish Integrated Operational Rule Curves for Hungry Horse and Libby Reservoirs-Montana*, for the U. S. Department of Energy, Bonneville Power Administration, Project Number 83-467, January 1996.
9. Montana Department of Fish Wildlife and Parks D. Skaar, Spawning Times of Montana Fishes, March 2001.
10. Montana Pollutant Discharge Elimination System (MPDES) Permit Number MT0022390:
 - a. Administrative Record;
 - b. Renewal Application Short Form 2A, March 1999;
 - c. Supplemental Information, February 2007; and
 - d. Updated application forms DEQ-1 and EPA 2E, March 2008.
11. US Army Corps of Engineers (USACE) Libby Dam Project Wastewater Treatment Facility Design Plans, 1972.
12. US Code of Federal Regulations, 40 CFR Parts 122-125, 130-133, & 136.
13. US Code of Federal Regulations, 40 CFR Part 403 – General Pretreatment Regulations for Existing and New Sources of Pollution.
14. US Code of Federal Regulations, 40 CFR Part 503 – Standards for the Use or Disposal of Sewage Sludge.
15. US Department of the Interior US Geological Survey, *Statistical Summaries of Streamflow in Montana and Adjacent Areas*, Water Years 1900 through 2002, Scientific Investigations Report 2004-5266, 2004.
16. US EPA *Technical Support Document for Water Quality-Based Toxics Control*, EPA/505/2-30-001, March 1991.
17. US EPA NPDES Permit Writers' Manual, EPA 833-B-96-003, December 1996.
18. US EPA Region VIII NPDES Whole Effluent Toxics Control Program, August 1997.
19. US EPA NPDES Permit Writers' Course Manual, EPA-833-B-91-001, April 2003.

Completed July 25, 2008, MK Valett

Attachment A

Outfall 001 Sample Point Locations

